

Docket No.: 8733.388.00
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:
KWON, Oh-Nam

Customer No.: 30827

Application No.: 09/788,420

Confirmation No. 5851

Filed: February 21, 2001

Art Unit: 2871

For: LIQUID CRYSTAL DISPLAY DEVICE AND
FABRICATING METHOD THEREOF

Examiner: Timothy L. Rude

MS Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

PRE-APPEAL BRIEF REQUEST FOR REVIEW

Sir:

Applicants request review of the Office Action dated March 24, 2011 in the above-identified application. No amendments are being filed with this request. This request is being filed with a Notice of Appeal. Applicants respectfully submit that there are clear errors in the rejections, and the Office Action has omitted one or more essential elements needed for a *prima facie* rejection.

Claims 1-9 and 11-28 are pending in the application with claims 11-26 being withdrawn from consideration.

The Office Action rejects claims 1-9 and 27 under 35 U.S.C. 103(a) as being unpatentable over Applicants' Admitted Prior Art (hereinafter "*APA*"). As discussed during the interview and in the Remarks section of the Response filed March 18, 2011, the Examiner is actually rejecting claims 1-9 and 27 over *APA* in view of U.S. Patent No. 6,188,458 to Tagusa ("*Tagusa*"). Applicants respectfully traverse the rejection.

Independent claim 1 recites a combination of features including, for example, "...a first adhesion conductive layer located only on the area of the third conductive layer exposed by the first contact hole and a second adhesion conductive layer located only on the area of the pad

layer exposed by the second contact hole, wherein the first adhesion conductive layer is directly contacted with the third conductive layer and the second adhesion conductive layer is directly contacted with the pad layer; a fourth conductive layer on the second insulating layer and the first adhesion conductive layer and electrically contacting a portion of a third conductive layer; a fifth conductive layer on the second insulating layer and the second adhesion conductive layer and electrically contacting the pad layer, wherein the first and second adhesion conductive layers are respectively contained within the first contact hole and in the second contact hole, wherein the width of the first adhesion conductive layer is identical with the width of the first contact hole and the width of the second adhesion conductive layer is identical with the width of the second contact hole.”

None of the cited references, singly or in combination, teaches or suggests at least the above features of independent claim 1. Applicants submit the Examiner appears to have made a clear error in maintaining the rejection of claims 1-9 and 27 over *APA* and *Tagusa*. In rejecting the claims, the Examiner alleges in the Office Action that the *APA* discloses “a first adhesion conductive layer, 24B, on the exposed portion of a third conductive layer and a second adhesion conductive layer, 14B, on the exposed portion of the pad layer.” *Office Action* at p. 5. Applicants respectfully disagree. Even if one of ordinary skill in the art construed the *APA*’s lower drain electrode 24B as “the third conductor” recited in claim 1, and the *APA*’s lower gate pad 14B as the “pad layer” recited in claim 1, the *APA* still fails to teach or suggest “a first adhesion conductive layer on the exposed portion of a third conductive layer and a second adhesion conductive layer on the exposed portion of the pad layer.” Applicants respectfully submit that the lower layer drain electrode 24B and the lower gate pad 14B do not have a portion exposed by a contact hole as recited in claim 1. Further, the Office admits that *APA* “does not explicitly disclose an embodiment wherein the first and second adhesion conductive layers are respectively contained within the first contact hole and in the second contact hole. *Office Action* at p. 6.

Tagusa fails to cure the deficiencies of *APA*. The Office asserts that “*Tagusa* teaches ... a metal layer, 41 ... deposited such that it is exclusively and entirely contained [within] the contact hole, 26b.” *Office Action* at p. 6. Applicants disagree. *Tagusa* discloses “after the formation of the contact hole 26b, the cleaning solvent tends to permeate from the contact hole into the interface between the resin and the underlying transparent conductive film, causing the

resin film to peel from the transparent conductive film” and “[i]n order to overcome this trouble ... the metal nitride layer 41 is formed on the transparent conductive film under the contact hole.” *Tagusa* at col. 12:16:23 and Figure 5. Therefore, *Tagusa* applies the metal nitride layer 41 in the area outside of the contact hole at the interface between the resin and underlying transparent conductive film. In contrast, claim 1 recites “the first and second adhesion conductive layers are respectively contained within the first contact hole and in the second contact hole, wherein the width of the first adhesion conductive layer is identical with the width of the first contact hole and the width of the second adhesion conductive layer is identical with the width of the second contact hole.”

The Office purports that “*Tagusa* is evidence that workers of ordinary skill in the art would find the reason, suggestion, or motivation to form such a metal layer such that it is exclusively and entirely contained at the bottom of a contact hole.” *Office Action* at p. 7. Applicants disagree. As stated above, *Tagusa* discloses that the “metal nitride layer 41 is formed on the portion of the transparent conductive film 37a’ under each contact hole 26b.” *Tagusa* at col. 12:6-8. The metal nitride layer 41 is formed under the contact hole to overcome the problem of the resin film peeling from the transparent conductive film when cleaning solvent permeates from the contact hole into the interface between the resin and the underlying transparent conductive film. *See Tagusa* at col. 12:16-19. Thus, *Tagusa* is not remotely concerned with forming a metal layer such that it is exclusively and entirely contained at the bottom of a contact hole, as suggested by the Office. Accordingly, the Office has omitted one or more essential elements needed for a *prima facie* rejection.

The Office alleges that

“it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the reflective display invention of APA with the sixth metal layer(s) formed such that it is exclusively and entirely contained at the bottom of all contact holes ... as an art recognized configuration suitable for the intended purpose of improving adhesion of the overlying conductive layer with the underlying conductive layer [col. 12, lines 4-34] which would improve yield and reliability [MPEP 2144.071]. This would result in a change of configuration from that shown in Applicant's Figure 1 E (elements 12A and 14A) to Applicant's Figure 3E (to corresponding elements 34 and 36).”

Applicants disagree. One of ordinary skill in the art would not find reason to combine the teachings of *APA* and *Tagusa* as suggested in the Office Action. In fact, the only way one of

skill in the art would have been able to arrive at the Office's addition of "sixth metal layer(s) formed such that it is exclusively and entirely contained at the bottom of all contact holes" would have been to use the Applicants' own specification as a roadmap. Thus, Applicants assert that the Office has made a clear error and used impermissible hindsight reasoning to arrive at the Applicants' invention as-claimed.

Based upon the above, Applicants submit *APA* and *Tagusa* fail to teach or suggest the combined features recited in the claims of the present application. As such, independent claim 1 and its dependent claims 2-9 and 27 are allowable over *APA* and *Tagusa*.

Applicants believe the application is in condition for allowance. Early and favorable action is respectfully solicited. If for any reason the Examiner finds the application other than in condition for allowance, the Examiner is requested to call the undersigned attorney at (202) 496-7500 to discuss the steps necessary for placing the application in condition for allowance. All correspondence should continue to be sent to the below-listed address.

If these papers are not considered timely filed by the Patent and Trademark Office, then a petition is hereby made under 37 C.F.R. §1.136, and any additional fees required under 37 C.F.R. §1.136 for any necessary extension of time, or any other fees required to complete the filing of this response, may be charged to Deposit Account No. 50-0911. Please credit any overpayment to Deposit Account No. 50-0911.

Dated: June 16, 2011

Respectfully submitted,

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